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Investigation of personality type and physical activity level in physiotherapy and rehabilitation department students

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ABSTRACT

Aims: The aim of this study is to examine the relationship between personality types and physical activity levels among undergraduate students in the department of physiotherapy and rehabilitation.

Methods: The participants' physical activity levels were assessed using the short form of the International Physical Activity Questionnaire (IPAQ). To evaluate the participants' personality traits, the Eysenck Personality Questionnaire-Revised/Short Scale was used. The relationship between individuals' personality traits and physical activity levels was determined using Spearman's rank correlation analysis.

Results: The study included 180 undergraduate students from the department of physiotherapy and rehabilitation. The results revealed a strong correlation between severe metabolic equivalent (MET) (r: 0.246, p: 0.001), moderate MET (r: 0.196, p: 0.009) and total MET (r: 0.202, p: 0.007) with psychoticism. Additionally, a strong correlation was observed between extraversion and walking MET (r: 0.180, p: 0.017) as well as total MET (r: 0.196, p: 0.009).

Conclusion: Students with personality traits of psychoticism and extraversion tend to be physically more active.This study shows that physical-activity levels may be predicted by personality traits on Turkish physiotherapy and rehabilitation students.

Keywords: Physical activity, personality tests , undergraduate students

INTRODUCTION

Physical activity is defined as voluntary movements produced by skeletal muscles that result in increased energy expenditure. It is known to play a crucial role both in the prevention of diseases and in the treatment of illnesses. Physical activity has positive effects not only on individuals' physical health but also on their mental well-being.[1,2] It has been reported that physical activity reduces the risk of cardiovascular diseases, lowers the risk of developing diabetes, decreases the risk of cancers such as colon and breast cancer, helps in the maintenance and improvement of the musculoskeletal system, and is beneficial in the prevention and treatment of psychological issues such as depression, stress, and anxiety.[3-7]

Personality is the unique manifestation of factors that influence an individual's feelings, thoughts, and behaviors. Constantly shaped by internal and external stimuli, personality encompasses an individual's biological, psychological, hereditary, and acquired abilities, motivations, emotions, desires, habits, and overall behaviours. In summary, the development of personality is influenced by both an individual's genetic traits and the environment in which they are situated.[8] Since the emergence of the concept of personality, many scales have been developed to assess it. One of the most commonly used scales is the revised Eysenck personality questionnaire - short form. This scale consists of 24 items and 4 subscales. These subscales are extraversion, neuroticism, psychoticism, and lie. The lie subscale serves as a control scale for testing the validity of the entire questionnaire.[9,10] Extraversion represents outgoing and social individuals who enjoy interacting with others and spending time with them. Neuroticism describes individuals who are tense, anxious, depressive, overly emotional, and lacking in self-confidence. Psychoticism refers to individuals who are distant and cold towards others, aggressive, and have a weak ability to empathize.[9]

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Personality types are significant factors influencing individuals' choices in physical activities.[11] The literature includes a substantial number of studies examining the relationship between personality types and physical activity levels.[12,13] However, to the best of our knowledge, there are no studies in the literature examining how personality structures affect physical activity levels in students enrolled in programs where the importance of physical activity is frequently emphasized, such as physiotherapy and rehabilitation. The aim of this study is to compare the physical activity levels of physiotherapy and rehabilitation students with different personality types.

METHODS

This prospective study included 180 voluntary students enrolled in the physiotherapy and rehabilitation program. The necessary permission for the study was obtained from Gazi University Ethics Committee (Date: 10.05.2022, Decision No: 2022-772). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. Students who had difficulty understanding the questionnaire, had known chronic illnesses, were on continuous medication, had physical disabilities, or had visual and auditory impairments were excluded from the study.

Participants' physical activity levels were assessed using the International Physical Activity Questionnaire (IPAQ) short form. The surveys were prepared using Google forms, and the relevant link was sent to all the students. The questionnaire consists of 4 separate sections and a total of 7 questions.[14] This questionnaire is used to determine the amount of vigorous physical activity, moderate physical activity, walking, and time spent sedentary over the past seven days. The level of physical activity is assessed using the metabolic equivalent (MET) method. The questionnaire provides separate MET values for vigorous physical activity, moderate physical activity, and walking, and is also used to calculate the total MET value.[15]

To measure participants' personality traits, the revised/short form of the Eysenck personality questionnaire was used. Based on the results of this scale, individuals are classified into 4 distinct personality types.[16] These personality types are extraversion, neuroticism, psychoticism, and lie. The Turkish validity and reliability study for this questionnaire has been conducted.[10]

Statistical Analysis

Statistical analysis was performed by using the IBM Statistics SPSS v21.0. (IBM Corp. Armonk. NY. USA). The variables were determined by the measurement (histograms. Kolmogorov-Smirnov test). Categorical variables were expressed as a percentage. The statistical significance level was $p<0.05$. A spearman correlation coefficient was performed to determine the relationship between personality traits and physical activity levels. Bonferroni correction was performed to minimize the risk of increased type 1 error due to multiple correlations and the corrected significance level was set at $p<0.001$.[17] The correlation coefficient was classified as negligible (0-0.10), weak (0.10-0.39), moderate (0.40-0.69), strong (0.70-0.89), and very strong (0.90-1.00).[18]

RESULTS

The average age of the students included in the study was 21.82±3.06 years. The average height and weight of the participants were 167.25±8.46 cm and 62.99±12.77 kg, respectively. Among the participating physiotherapy and rehabilitation students, 15.6% were in the 1st year, 22.8% were in the 2nd year, 28.3% were in the 3rd year, and 33.3% were in the 4th year.

The relationship between participants' physical activity levels and personality types is shown in Table.

Table. Personality traits and the level of physical activity (IPAQ-short form) among Turkish pyhsical therapy and rehabilitation students

IPAQ-short form domains	Extraversion (n=180)	Neuroticism (n=180)	Psychoticism (n=180)
IPAQ vigorous	r: 0.113 p: 0.132	r: -0.076 p: 0.308	r: 0.246** p: 0.001
IPAQ moderate	r: 0.028 p: 0.708	r: -0.099 p: 0.184	r: 0.196** p: 0.009
IPAQ walking	r: 0.180* p: 0.017	r: -0.018 p: 0.809	r: -0.017 p: 0.820
IPAQ total	r: 0.196** p: 0.009	r: -0.047 p: 0.540	r: 0.202** p: 0.007

IPAQ: International Physical Activity Questionnaire, r: Speraman's correlation coefficient; p, significance, *: Correlation is significant at the 0.005 level. **: Correlation is significant at the 0,001 level

The study found a strong correlation between psychoticism and both IPAQ vigorous, IPAQ moderate, and IPAQ total. Additionally, a strong correlation was observed between extraversion and both walking MET and total MET. No relationship was found between neuroticism and physical activity level.

DISCUSSION

In this study, we aimed to examine the relationship between personality types and physical activity levels among students actively enrolled in the department of physiotherapy and rehabilitation. The results revealed a correlation between severe MET and moderate MET with psychoticism, between walking MET and extraversion, and between total MET with both extraversion and psychoticism.

The results of our study showed a strong positive correlation between extraversion and IPAQ walking as well as IPAQ total. A systematic review and meta-analysis examining the effects of personality determinants on physical activity found that extraversion positively affects physical activity levels, while neuroticism has a negative impact.[11,19] The study conducted by Gacek and colleagues on Polish and Spanish physical education students also found a positive correlation between extraversion and physical activity levels.[20] The results of these studies are consistent with our findings.

Although psychoticism is an important trait in Eysenck's three-factor model of personality, it has not been as extensively studied.[21] Many studies have found no relationship between psychoticism and physical activity.[22,23] However, our study found a strong positive correlation between psychoticism and IPAQ vigorous, IPAQ moderate, and IPAQ total. In our study, it is surprising that there is a strong relationship between psychoticism and physical activity. This may be due to physiotherapy and rehabilitation students receiving education about the importance of physical activity.[24]

A meta-analysis examining the relationship between personality types and physical activity levels indicated a negative relationship between neuroticism and physical activity levels, although this effect is small.[21] In a meta-analysis examining 21 studies on the relationship between neuroticism and physical activity, a correlation coefficient of -0.11 was calculated. Our study found no relationship between neuroticism and physical activity level. This discrepancy may be due to differences in the country and culture of the participants.[21]

Limitations

It is difficult to predict students' physical activities solely based on their personality types. Factors such as students' work status, living conditions, stress level, self-esteem and social support affect their physical activity levels.[12,25] The absence of these considerations in this study is a limitation. Future studies should take these variables into account. Additionally, the absence of a control group in the study is a limitation.

CONCLUSION

There may be a strong correlation between personality type and physical activity level among undergraduate students in the physiotherapy and rehabilitation program.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the Gazi University Ethics Committee (Date: 10.05.2022, Decision No: 2022-772).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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